The Scottish Government believes that achieving long term sustainable economic growth will require a step change in research and development (R&D) and innovation culture. The benefits to Scotland in being fully engaged in European R&D activity are many: through the provision of access to European networks; the increase in scientific and business reputations; improved ability in attracting and retaining world class researchers; and through access to new markets and funding.

Scotland is a well connected hub of world-leading research and our universities and research institutes are among the best in the world. One of the reasons we perform so well can be attributed to our research pools – a concept unique to Scotland that encourages greater collaboration between networks of researchers across universities – breaking down boundaries between institutions and attracting excellent talent from across the world.

We already perform well in the current Framework Programme, particularly in the health and ICT sectors. Since 2007, Scotland has attracted nearly €222 million in funding from Framework Programme 7, the majority of this going to our universities and research institutes. Scotland is therefore in a strong position to bring this expertise and strength in collaboration to bear in linking with other regions and member states to address Europe's Grand Challenges. Scotland's research excellence can help focus the priorities for future R&D policy, including the new Common Strategic Framework.

Scottish Government is therefore keen to participate in more productive and strategic engagement with the European Commission and welcomes the opportunity to respond to this consultation. We recognise the importance of a strong and vibrant Europe to achieve this and Scotland is committed to the Europe 2020 Strategy, having submitted our own Scottish response to the National Reform Programme and actively contributed to the UK position. The recently adopted 'Innovation Union' is very much aligned with the principles set out in the Scottish Government's Economic Strategy and our Economic Recovery Plan. We also support the focus in the EU 2020 Action Plan on Jobs & Growth in the development of the low carbon economy as a future overarching priority for the whole EU economy, and its biggest opportunity to secure future economic growth, underpinned by low carbon innovation.

In preparing this response we have worked in partnership with our enterprise agencies, Scottish Enterprise and Highlands and Islands Enterprise, Scotland Europa and the Scottish Funding Council. Collectively, we made significant efforts to gather evidence from a range of our stakeholders across the business, academic and public sector communities in Scotland. The comments and recommendations set out in this response are therefore an amalgam of the contributions received from the participants and organisations named in Annex A of the paper.

We believe that by working directly with the European Commission, Scotland is in a unique position to support collaboration and add real value to the collaborations at the regional and member state level.

Response from the Scottish Government

to the European Commission's Green Paper (2011)48

From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation Funding

Working together to deliver on Europe 2020

1. How should the Common Strategic Framework make EU research and innovation funding more attractive and easy to access for participants?

The Scottish Government believes it is crucial, prior to any significant altering of funding schemes, that Europe has a clear vision of its shape in the future. We need a strategic view of what Europe is trying to achieve and that this is developed with genuine and broad consultation across regions and member states.

We support the integration of the next Framework Programme, the CIP and EIT so long as genuine integration is actually achieved. We encourage a reduction in the number of funding schemes and instruments and believe there are numerous steps that can be taken to make the Common Strategic Framework (CSF) more attractive and easier to access.

Our suggestions are:

In addition to a single entry point to all programmes, the rules must be rationalised to ensure clarity and consistency. Greater transparency of the review process is required (e.g. the identity of the reviewers should be provided after the proposal has been reviewed), along with better communication and co-ordination between call officers, national contact points and proposal reviewers.

Research and development tends to moves faster than administrative procedures, particularly from the business perspective. The idea at the time of application can be quite different by the time the money is received. The length of time from applying for FP to the time the grant is received can be up to two years. This process needs to be faster. Time and bureaucracy need to be balanced with the needs of business; otherwise the risk is that the research itself is constrained and at the end of the negotiation, the project does no longer reflect the research need of the business.

The current application process is very time consuming and complex, particularly for project coordinators. This places a significant burden on SMEs which makes applying for funding less attractive. Changes to reduce the time spent on administering the grant application process by already resource limited SMEs would be welcome

An opportunity to amend a proposal following the initial submission would be welcomed. For example, the result could fall into three categories; Accepted/Not Accepted/Resubmit with Changes. If there are a number of proposals with the same score but funding can only be given to one, there would then be a second chance to strengthen the proposal based on the reviewers comments.

Cooperation calls should be reviewed to ensure that the EC is creating significant challenges for Member States. There is a great deal of duplication and overlap between call topics on an annual basis. Currently, the EC suggests the solutions to the challenges faced by Europe and this can potentially stifle innovation and creativity. Any future programme should state its goal and place the emphasis on encouraging new solutions and ideas.

We encourage initiatives directed towards achieving a better balance between control based and trust-based systems that have an audited track record of robust management and reporting practices.

In terms of accountability for funding, the principle of respecting the accounting systems and practices of recipient institutions should be upheld. Timesheets recording the activity on the project in question should be sufficient.

There should be wariness in respect of lump sums as a proposed simplification. There is a danger that these would not work if inadequate in size. Furthermore, UK universities are working to transparent costing in the context of full economic costing (FEC), and lump sums go against this.

We would caution against the notion of payment against results, or output-based funding, as a means of simplification. The most likely effect would be to reduce quality through applicants "aiming low" in order to feel guaranteed of the funding.

FP funding should take account of the capital cost of test and demonstration, this is particularly important for the development of renewable technologies where the costs of demonstration and deployment are high. Cash flow management is important and often this is where projects fail.

2. How should EU funding best cover the full innovation cycle from research to market uptake?

We believe that the entire innovation chain must be supported: from blue skies through to applied research via exploitation and the involvement of industry, with emphasis on key sectors and companies with ambition. The scope of innovation support should be broadened and viewed as non-linear.

We suggest having specific collection dates for calls as this would allow applicants to plan better. To this end, a method of open calls would make the process easier for both small business and small research centres as it would remove the pressure on the limited staff resources and allow for more attention to be given to a quality application, thus increasing chances of success. What is needed is a funding mechanism that supports for the various degree of readiness. For example, an initial set of funding could be awarded just to support the creation of the consortium.

We consider there should be more funding towards the proof of concept stage to encourage more innovation. For example, instead of a 3-4 year project, consider having two 1-2 year projects under the remit of proof of concept and technology transfer. Proof of concept brings it to the point where the idea is proven to work; technology transfer then brings it to the market. Both require R&D but with more emphasis on the Research for the first part and the Development for the second part. There will be more scope for innovative research and if the idea is not working, the project is abandoned and does not drain any more funding. In addition, the consortium has proven themselves before they are given more funding in stage two so there is a higher chance of success.

Often there is insufficient money available if the initial research and testing fails and this removes the opportunity for the next stage of research due to lack of funds. If the scope of R&D testing was expanded by having some sort of monetary pipeline feed to help through tricky times, this could reap benefits. A suggestion is to extend R&D money to cover proof of concept activities as part of the project. This extra funding support would be particularly helpful in areas like Marine Energy, where a prototype can be particularly expensive.

Currently, there is no funding to assist applicants in IP-related issues during the preparation phase of the project. A funding mechanism could cover preparation costs, including costs for IP assistance, through the project budget.

In funding the innovation chain, the Commission should also look at funding projects that are a close to the market. Companies, particularly SMEs, want a product out into the market in a relatively short period (indicatively 3 years). In the Energy sector in particular, there is a great need – identified in the EU Strategic Energy Technology Plan – for large scale demonstration of new technologies such as marine energy, smart grids and carbon capture and storage over the next decade. Future EU programmes for Energy in particular must focus on providing support for demonstration of those technologies that must be brought to market by 2020 to meet the EU's 2050 emissions reduction and low carbon economy goals.

To attract more SMEs into the CSF, a tendering model could be created to ensure SMEs are able to enter a project at a later date rather than just early on in the process.

3. What are the characteristics of EU funding that maximise the benefit of acting at the EU level?

We consider that provided the review process for applications retains its focus on research excellence and innovation, only the highest quality internationally excellent and world-leading researchers within Europe will be supported. As a result researchers in this category are likely to be those who are successful in leveraging additional funds from other sources in their own countries and internationally.

4. How should EU research and innovation funding be used to pool Member States' research and innovation resources?

Scotland has experience of pooling research resources and is enthusiastic about the concept of sharing research and innovation resources.

We have developed the concept of "**research pooling**" to encourage greater collaboration between networks of researchers across universities. Research pooling has helped to create a new and distinctive research landscape within Scotland. By concentrating investment on networks of excellence with our partners, we have created powerful, well resourced communities that are now attracting research talent from across the world.

Scotland has 11 research pools so far covering a broad range of research expertise, with an emphasis on enhancing excellence and including life sciences, energy, imaging, informatics and computer science, marine science, engineering and geosciences.

The evidence so far is of a significant added-value in terms of the enhanced quality of research and competitiveness of Scottish science from harnessing our research and development operations within such structures. Our research pools are underpinned by excellence and are in a strong position to bring this expertise to bear on the Europe's 'Grand Challenges'. We would see considerable benefits in terms of global competitiveness in R&D and innovation emerging for Europe from linking research pools from different European member states. Scotland wants to build on this expertise by working with research partners to establish new pools where there are benefits and clear links with European priorities. In particular, we will explore how we can bring together our research expertise and develop research pools that are aligned to the Joint Programming Initiatives and ensure improved exploitation of research results across the EU.

We believe the creation of similar 'Research Pools', based on excellence, in different European member states linked through Commission funding would ensure Europe harnessed the highest quality research.

Our approach to research pooling could also be considered an example of best practice in the implementation of new and innovative instruments supporting the engagement of business in EU R&D and narrowing the gap between industry and academia.

Joint-programming can be valuable, but care must be taken to ensure that activities being supported at the European level are those activities that cannot easily be supported within an individual Member State or Region and that clearly benefit from a European collaboration.

To encourage all Member States to participate for CSF, we suggest that the Commission should distribute its funds evenly throughout the CSF period rather than allocating the majority of the funds towards the end of the CSF time period. Such an approach would ensure the best projects are funded rather than offering money towards projects simply to use the remaining money.

5. What should be the balance between smaller, targeted projects and larger, strategic ones?

We consider it important to ensure that there is scope for a range of engagements from the small targeted projects to large strategic initiatives. This will guarantee that essential contributions to the European research and innovation effort can be made regardless of size or capacity of any participating organisation. As already indicated, we believe that the range of new Energy technologies essential to the low carbon economy and addressing the Grand Challenges must be supported at a large scale through funding of the SET-Plan demonstration.

Smaller more targeted projects will be particularly important to ensure engagement of SMEs.

6. How could the Commission ensure the balance between a unique set of rules allowing for radical simplification and the necessity to keep a certain degree of flexibility and diversity to achieve objectives of different instruments, and respond to the needs of different beneficiaries, in particular SMEs?

We are aware of the many challenges facing SMEs when applying for European funding and consider that simplification and reduced bureaucracy is essential. Many SMEs consider that participating in European programmes involves heavy administrative burdens that use up their limited resources and offer a relatively low chance of a successful return on that investment. This can also be an issue for larger companies where the bureaucracy prohibits involvement.

We believe that providing funding to support SMEs to link in with appropriate partners would be helpful. In Scotland the services of INTERFACE provide a point of contact for SMEs and other industry to engage with Higher Education across the whole of the country - http://www.interface-online.org.uk/. Working with Higher Education institutions that often have expertise in engaging with European programmes can reduce the burden on SMEs seeking to participate in European programmes.

We recommend a linked network of offices, similar to the INTERFACE model, across Europe. This would allow all European SMEs to exploit specialist expertise in any Higher Education institution in Europe. It could also allow more successful partnering between SME and industry partners across Europe.

7. What should be the measures of success for EU research and innovation funding?

We recognise that the concept of indicators varies according to the different players and different size companies. SMEs for example are concerned with having pragmatic indicators such as impact on job creation, export, profit, etc. It is therefore important that various interests and needs are taken into consideration when setting the measures, especially with the view to increasing SMEs and industrial participation.

The focus of the Innovation Union flagship is on improving conditions and access to finance for research and innovation, "to ensure that innovative ideas can be turned into products and services that create growth and jobs".

IP could also be an intangible indicator. The translation of research into practice should be key to measuring the success of a project. In fact, innovation should be defined considering the impact of a product into the market. However, research can be a result itself even when it does not generate practical outcomes. This should also be taken into account when defining the indicators towards innovation. It is important also to recognise the number of granted Patents is a more valuable measure of innovation than the number of filed PCT Patent Applications.

Commercially valuable attributes of many digital innovations are not protectable by Patents or Trade Marks. Instead, these innovations are protectable through copyright. Accordingly, we would argue that a focus on Patents and Trade Marks neglects the significant economic benefits derived from transactions in the broader class of Intellectual Assets. In particular, the number of IP transactions (whether licences or assignments) conducted by European institutions may provide an inferential mechanism for capturing numbers of non-registrable IP assets.

Given the overarching importance of the low carbon economy and emission reduction to the EU, as set out in the EU Low Carbon Roadmap to 2050, it will be essential for future research and innovation funding success to be measured in terms of emissions reduction or carbon intensity, across all sectors of the economy.

Other measures of success could be:

- An improvement in the life of EU citizens
- New products launched into the market
- Measure of consequential investment as a result of FP funding
- The further development of the entrepreneurial base
- Growth of exports from Europe to the rest of the world
- Job creation or retention
- The amount of money claimed by applicants compared to the allocated budget

8. How should EU research and innovation funding relate to regional and national funding?

We are aware of the tension that exists between European competitiveness and regional cohesion.

The regional management of economic development per the Structural Funds is at odds with centralised management at an EU level of the Framework programme. This must be if CSF is to be more focussed on economic development.

It is worth noting that the potential to further exploit Structural Funds to help build capacity in Research and Innovation could be a significant driver of enhanced European performance and global competitiveness. We have already demonstrated real progress in Scotland in

reprioritising cohesion funds to support innovation to underpin the low carbon economy, which will be the significant driver of growth for the EU over the coming decades. Future programming must ensure greater flexibility and complementarily between innovation and cohesion programmes to allow governments to prioritise low carbon economic development.

Tackling Societal Challenges

9. How should a stronger focus on societal challenges affect the balance between curiosity-driven research and agenda-driven activities?

We wish to emphasise that the CSF must be careful not to lose curiosity and demand driven research by adding criteria about societal challenges as this tends to lead applications to try to fit square pegs in round holes.

The EU has a real opportunity to lead in the growth of the low carbon economy, underpinned by investment in innovation to support the development of new energy, environmental and clean technologies. This is a challenge across the whole EU economy and is as much about innovative human behaviours and leadership as it is about development of innovative new technologies.

In terms of societal challenges, it would be sensible for the Commission to consider what USA, Japan and China consider to be their challenges. Europe must be clear about what specific products and services are required for future needs of our society. By having a clear understanding of this, this will aid SMEs to understand whether existing in house know how or IP can be exploited in new business areas.

The Low Carbon agenda could be a domain where to develop social innovation as it does not solely relate to technological innovation. In fact, the low-carbon agenda can also be achieved through behavioural changes and via changing “how people do things”.

10. Should there be more room for bottom-up activities?

We agree that a top-down direction often results in a lack of transparency in the priority setting mechanism at EU level. A top down approach is a method of providing the challenges and the solution at the same time thus limiting creativity and making the competition less open and limited to those players in Europe that are capable of providing the solutions as decided in the call by the EC and the lobbying networks.

Therefore we welcome a bottom up approach. Overall, a bottom-up approach is deemed as preferable to the current top-down approach and it should be extended to the entire mainstream programme. A bottom-up approach will remove the need of an early engagement in lobbying activities and allow for a better balance between the political direction and vision given by EU 2020 and a funding environment which is flexible enough to adapt to fast moving technology.

In addition, a bottom-up allows for a project to be really structured around the impacts as it forces applicants to focus on the objectives (on the why the project is proposed) in order to define the overall scientific scope.

We believe that Eurostars provides a good example of the simple application process as well as for its bottom-up approach. The bottom–up approach together with the 2-partner consortium is a good way of building the capacity of small companies who access to EU funding for the first time. The Eurostars scheme could be incorporated in the mainstream programme, thereby establishing funding schemes that reflect the various level of preparedness of companies to step into Europe.

13. How could EU research and innovation activities attract greater interest and involvement of citizens and civil society?

We believe that attracting greater involvement by EU citizens would be beneficial. To do this we believe that Europe should more actively pursue the benefits of social media and other emerging enabling technologies to more directly and continuously engage with European citizens. In connection with this, we welcome the reference in the Innovation Union Communication for the need for transparency of information and involvement of citizens to ensure public trust in scientific and technical breakthroughs.

A suggestion is that a proportion of EU research and innovation funding could be ear-marked for initiatives focussed on the use of social media and other emerging tools to explore the challenges in science-informed policy-making arising from, for example:

- the tension between the uncertainties in science and the need for certainty in policy-making; and
- the sometimes slower pace of scientific development compared with public demand for political change.

Web-based systems such as blogging, wikis, on-line encyclopaedias and podcasting, by creating an environment in which people can develop their ideas in a more horizontal, collaborative way are increasing in popularity and are likely to prove critical in realizing the broad nature of innovation in solving the European societal Grand Challenges.

Finally as Grand Challenges are global it is important that social economists contribute to the design of the CSF because Grand Challenges require an interdisciplinary approach.

Strengthening competitiveness

14. How should EU funding best take account of the broad nature of innovation, including non-technological innovation, eco-innovation and social innovation?

The Scottish Government believe that public procurement driven innovation could play a significant role in the success of the future research and innovation framework. Public procurement offers an enormous potential market for innovation in products and services and can also help develop new markets and to support innovation transfer. The importance of public procurement has been recognised as part of the Innovation Union, with clear action to create markets across the EU to achieve innovative procurement markets equivalent to those in the US through the SBIR programme.

We would welcome more cross cutting themes and inter-disciplinary projects and the widening of the definition of innovation as a vehicle to take account of the broad nature of innovation. In particular, the development of the low carbon and emissions reduction to tackle climate change should be a cross cutting priority across all programmes and the whole economy.

15. How should industrial participation in EU research and innovation programmes be strengthened?

We recognise the low participation rates of businesses and acknowledge the necessity to increase businesses involvement.

One way of strengthening industrial participation would be to more closely link vocational education and training (VET) programmes with ongoing research projects. In particular, it is

proposed that through strategic curriculum alignment, students on such VET programmes are given the opportunity to learn from and contribute to these projects. By communicating the benefits and propagating the teachings of these projects to their employers, VET students may stimulate companies into increased engagement with European research and innovation programmes. Similarly, by encouraging such students to contribute to ongoing research projects, the industrial relevance and credibility of these projects may be enhanced thereby providing further motivation for industry to participate therein.

The Commission could provide a broader definition of a SME so as to help those medium companies that are owned by large companies but in practice have the same staff resources as that of an independent SME.

As it is easier to collaborate with a partner in your own Member State, the Commission could consider increasing to 50% single country funding if several entities involved.

Proposals could score points for the type of consortium, i.e. the expertise of the partner should count along with a broad mix of industry, research organisations and academic institutions, with more points for greater industry involvement

If the project is led by an industrial organisation, the organisation should receive a higher allocation of funding (above 75%) and this will encourage more industry led projects.

16. How and what types of Small and Medium-sized Enterprises (SME) should be supported at EU level; how should this complement national and regional level schemes?

We believe that to support SMEs at EU level it is paramount to simplify the governance, rules of participation and the financial regulations.

The current emphasis on financial checks and audit certification should be tempered with a guiding principle of trust, with a shift to full costing and the recognition and acceptance of usual accounting practices. Bureaucracy, the long lead time between proposal and funding, the low levels of success and heavy resource demand also provide disincentives. Cash flow and complexity of the process; there is the need to find a mechanism whereby the time from the awarding of the project and the payment is reduced, as well as a mechanism whereby the final payment to all partners is not withheld because of the late submission of the final report by one single partner.

Another way to encourage SMEs and industrial participation more generally, would be the possibility of covering the preparation costs via the project budget (for successful projects), as it is currently the case for the Interreg IVC Programme. Again, the Commission could take some existing programmes as good practice example.

As SME's don't often have the resources with which to put together a proposal there should be a travel allowance for pre-proposal meetings and funding for the writing of the project should they choose to lead one. This will also enable them to engage early in the proposal process. Funding should also be provided to support key areas such as management team formation and development and prototype costs - this is a recognised need in growing successful and flourishing businesses.

Provision to provide support for spin-out companies continues to be challenging. While the state can provide 100% funding to universities and research institutes at the pre-commercial stage, this changes to SME aid intensities at the point of company formation.

Commercialisation of the results is not often seen as a key part of the project, a fact which is reinforced by the majority of projects being led by scientists, which can discourage SME involvement.

Many SMEs work with local universities on research and development, it would therefore be helpful to encourage greater SME participation if the rules of the programme could allow Higher Education Institutions to work with local SMEs without jeopardising the geographical spread of the consortium.

17. How should open, light and fast implementation schemes (e.g. building on the current FET actions and CIP eco-innovation market replication projects) be designed to allow flexible exploration and commercialisation of novel ideas, in particular by SMEs?

We acknowledge that innovation can be time-sensitive, requiring rapid action and funding to secure a competitive edge. As a consequence, industry and in particular SMEs, cannot afford to delay their progress while an application, review and negotiation cycle is progressed along current timelines. The Commission should seek to establish a process that can provide 'very fast-tracked' support across the innovation spectrum, including 'proof of concept', testing, piloting and demonstration.

An 'open call' process with tightly defined criteria that allows submissions at any time, with decisions on funding being taken four times a year, and with funding being released no later than two months after a decision. This would necessitate a team of reviewers across Europe with the review process being handled remotely.

20. How should intellectual property rules governing EU funding strike the right balance between competitiveness aspects and the need for access to and dissemination of scientific results?

We recognise that there is a need for a better balance between protection and sharing: sharing is the way forward but there should be a balanced sharing of IP; companies need to be able to exploit what is generated through a project. Work between academia and industry should be facilitated in order to promote the sharing of IP so that IP goes into the market and it is not simply retained by Universities. The Innovative Medicine Initiative JTI could be a good model as an example of joint working between industry and academia.

The Commission should consider allowing 'Easy Access' to IP of any IP generated by Commission funded projects that is not exploited by the partners within a reasonable timeframe. 'Easy Access' IP has been pioneered at the University of Glasgow (see http://www.gla.ac.uk/businessandindustry/technology/. 'Easy Access' would ensure companies and individuals in Europe could license this unexploited IP for free. All IP that was being offered for 'Easy Access' might be registered centrally, and made available locally across Europe through the network of INTERFACE offices.

However, an exclusive focus on the provisions of specific IPR legislation neglects probably one of the most important aspects of IP, namely, that it is fundamentally a commercial tool. In this vein, it should be noted that effective management of IP is crucial to extracting the maximum value there from. Key to this is a better recognition of the value of IPR and its potential for generating revenue.

To this end, there is the need of a balance between free access and high protection. The simplification could also be extended to the IP rules in projects and Grant Agreements. In terms of IP a key issue is also *exploitation*. There should be a right model for IP sharing and for exploitation, which at the moment does not seem to exist. There may also be an element

of further development, to go from 'prototype', like the research project will provide, to a proper, user-friendly tool that potential users will be happy to use; and an issue of how to maintain and further develop such tools.

Strengthening Europe's science base and the European Research Area

21. How should the role of the European Research Council be strengthened in supporting world class excellence?

We strongly support the European Research Council (ERC). An increase in resource available through the ERC to support individual scientists would be welcomed and is likely to be the most effective way of continuing to harness the world class excellence that exists in Europe.

22. How should EU support assist Member States in building up excellence?

We believe that the concept of pooling resources across Europe encourages excellence. Please see our comments on this to question 4.

23. How should the role of Marie Curie Actions be strengthened in promoting researcher mobility and developing attractive careers?

We believe that many of the world's best researchers are not aware of the Framework Programme or of the excellence of the Marie Cure Fellowships. This is particularly the case with regard to the People programme, where opportunities are not always well promoted and publicised. Although remuneration levels are appropriately set to attract the best researchers, publicity of the excellent career opportunities on offer may not be effective.

We would therefore welcome increased promotion of these activities, together with a restructuring to encourage young researchers just beginning their careers and senior researchers already leading in their field to apply for Fellowships. For example, through an extension of the European Research Council (ERC) Starting and Advanced grants scheme which has itself proved successful.

In addition, the opportunity for mobility for PhDs and early stage post-doctoral workers is of particular importance. As such, the continuation of the core programmes within Marie Curie is vital, with improved budget in real terms. The organisation of doctoral training should entail the development of an internationally transferable set of skills relating to subject area and to matters like project management, intellectual property and entrepreneurship. Specific issues would include: a renewed impetus on implementing the European Doctoral Programme; additional resources for PhD programmes where at least six months in spent in a different member state or alternative country either in a university/research institute, industry or third sector organisation (Scottish Research Pools are well placed to champion these) and a greater emphasis on researcher career development including a formal requirement for EC HR Excellence in Researcher Career Accreditation to receive ERC Fellowship holders.

24. What actions should be taken at EU level to further strengthen the role of women in science and innovation?

There are examples of best practice being promoted in some Member States for example the Athena Swann Charter for Women in Science (see http://www.athenaswan.org.uk/html/athena-swan/).

25. How should research infrastructures (including EU-wide e-Infrastructures) be supported at EU level?

We believe that cataloguing and advertising the availability of specialist research facilities across Europe and providing resources through projects to access them, even if they are present in another Member State, would be a more efficient and effective use of the Commission's resources. Additionally, a common simplified language needs to be developed across scientists, economists, social scientists, business and public sector partners.

26. How should international cooperation with non-EU countries be supported e.g. in terms of priority areas of strategic interest, instruments, reciprocity (including on IPR aspects) or cooperation with Member States?

We believe Europe has, and should continue to have, a major role in international R&D engaging third countries as appropriate when dealing with important global problems. Scotland's expertise extends across a number of global problems. We would wish to see the CSF provide opportunities to continue our engagement in such activities. The capacity to work in partnership with developing countries should be retained, especially when addressing problems of global magnitude, for example, in health - HIV, TB, Malaria and in other areas relevant to the 'Grand Challenges'.

The Commission should include organisations outside the EU as full partners with either nominal or no funding but preferably nominal; travel and subsistence funding can still be limited to within the EU.

Closing remarks

Are there any other ideas of comments which you believe are important for future EU research and innovation funding and are not covered in the Green Paper?

We believe the following points worthy of consideration:

1) In its Green Paper on unlocking the potential of cultural and creative industries, the Commission recognised that the cultural and creative industries are one of Europe's most dynamic sectors. In addition, the EC recognised that beyond their direct contribution to GDP, cultural and creative industries are also important drivers of economic and social innovation in many sectors[1].

According to recent analysis, the global entertainment and media industry is forecast to grow with particularly strong growth in the mobile, wireless, internet advertising and video games sectors[2]. Despite this, the Digital Agenda for Europe [3] noted that compared to its major trading partners such as the United States, Europe continues to under-invest in ICT related research and development. To counter this trend, it was proposed that "Europe must step up, focus and pool its investments to keep its competitive edge in this field". Scotland has substantial research expertise in digital media, digital technologies and informatics.

The growth potential of the digital creative industries, the existing calls for investment in ICT research and development; and Scotland's clear expertise in this sector, highlight the

[1] EC Green Paper, Unlocking the potential of cultural and creative industries, Brussels, COM(2010) 183
[2] Digital Inspiration: Strategy for Scotland's Digital Media Industry, Scottish Digital Media Industry Advisory Group (IAG)), 2009
[3] A Digital Agenda for Europe, COM(2010) 245 final/2

importance of ICT and digital creative industries in defining the over-arching priorities for the EU economy and opportunities for securing future economic growth.

2) There is a need to have a clear map across European regions to understand where key skills are in the Life Sciences sector. This will provide a regional landscape of what is available in Europe and will contribute to enhance the engagement of our business in Europe but also will enhance the regional collaboration at sectoral level. Thus it could be an exercise that the Commission could undertake as part of the Commons Strategic Framework for future Research and Innovation.

3) It is suggested that a Competiveness Pillar be added to the CSF to complement and complete the R&D and Innovation Pillars. The Competiveness Pillar should include SME and entrepreneurship measures. In addition, more a coherent outlook and a stronger partnership between the different Commission DGs, particularly DG Enterprise and Industry, DG Research and Innovation and DG Region would avoid overlaps and promote efficient synergies.

4) We support the continuation of “cooperation” projects as the mainstay of European transnational research activity, since these projects give the chance for large or small groups of partners from higher education and industry to carry out deliverables-based research at a high level of excellence. They should continue to be multi-disciplinary in breadth and scope. Also, the inclusion of social sciences should continue as a trend

ANNEX A

Contributors to the Scottish Government Response to the European Commission's Green Paper (2011)48

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